PROVINCE OF NOVA SCOTIA

Annual Report

OF THE

NOVA SCOTIA WATER RESOURCES COMMISSION

FOR THE YEAR ENDED
DECEMBER 31, 1970

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TO HIS HONOUR,

THE HONOURABLE VICTOR de B. OLAND, V. D.,
Lieutenant Governor of Nova Scotia

May it please your Honour:

I have the honour to submit the Annual Report of the Nova Scotia Water Resources Commission, for the year ending December 31, 1970.

I have the honour to be Sir,

Your most obedient servant,

A. E. Sullivan,
Minister Under the Water Act.

Office of the Minister,
Halifax, N.S.
December 31, 1970

ANNUAL REPORT OF THE NOVA SCOTIA WATER RESOURCES COMMISSION For the Year Ending 31 December 1970

Honourable A. E. Sullivan
Minister Under the Water Act,
Halifax, Nova Scotia.

Dear Sir:

I have the honour, sir, to submit the annual report of the Nova Scotia Water Resources Commission for the year ending 31 December 1970.

The operation of the Commission has demonstrated a substantial increase during the year. In part, this increase has been due to the additional responsibilities delegated to the Commission as a consequence of the Environmental Pollution Control Act and in part to the intensification of the public awareness of pollution control. It has been found necessary, therefore, to add staff and to re-organize the functions of existing staff.

In the municipal field there has been a marked increase in the capital expenditures for pollution abatement projects as well as for studies to determine the extent of pollution. Indeed, virtually all the towns and significant villages, as well as some of the counties, have completed or are in the process of completing pollution abatement surveys.

The activity in industrial pollution abatement continues to increase but not at a satisfactory rate. It is determined that there will be a greater effort in the next year in this regard.

Although the operation of the Provincially-owned utilities in supplying water to industries has been acceptable, it is considered that considerable economy might be achieved by integration of the various operations. A proposal has been made to government in this regard and a decision is expected in the first few months of 1971.

Appointed Members

The Water Resources Commission board remains un-

changed at the end of the year. The Chairman is Mr. E. L. L. Rowe, Vice-Chairman, Dr. J. E. Blanchard and Messrs. J. W. Affleck, A. J. MacDonald and R. M. Barteaux are members. With the exception of the Chairman, the terms of appointment of all members expired by December 1970.

Staff

During the current year it has been found necessary to add three additional staff engineers to the staff to bring the total strength of engineers up to eight, excluding the Technical Director and the Chairman. These personnel have been required to undertake wast treatment control and inspection programs for both municipal and industrial waste and for air pollution abatement functions. In this latter regard, reference is made to the Environmental Pollution Control Act which was passed at the last sitting of the House of Assembly.

Many members of the technical staff were able to participate in a number of short courses and seminars relating to water supplies and waste treatment. One staff engineer and two senior technicians completed a course in treatment plant operations which is conducted by the Ontario Water Resources Commission.

Administration

A program of consolidation of the labour forces for the various Provincially-owned water utilities has been carried out, and it is anticipated that in the next year that further revisions will be made to undertake preventative maintenance programs to enhance the efficiency of operation of these various facilities. It has become increasingly apparent that proper management and maintenance of these utilities is difficult from a central location at Halifax and the division of the Province into areas with local technical support is contemplated.

During the 1970 Session of the Legislature the Environmental Pollution Control Act was passed. This legislation was proclaimed in May of 1970 and has as one of the net effects to add responsibilities of air and soil pollution to the Water Resources Commission. Apart from the requirements of additional staff to accommodate these responsibilities it has been

necessary, as well, to revise the staff functions to deal with inspection and investigation.

A decision was made to provide a mobile inspection workshop for the purpose of inspecting and advising on the operation of the treatment plants in the Province, which now number greater than 350. Plans for this unit have been completed, and when the necessary vehicle has been delivered, the equipment will be assembled and the services will start. In the meantime, inspections and investigations are being carried on by staff operating from the Halifax office. While the main purpose of the unit was the inspection of treatment facilities throughout the Province, the equipment will be designed and acquired to allow the use of the unit for functions in relation to air and soil pollution abatement.

As a consequence of work contracted to Ontario Research Foundation for Water Resources Commission, a patent has been granted in United States and Canada for a device for disinfecting domestic sewage. An agreement with Ontario Research Foundation has been concluded, where that organization will license the device outside Nova Scotia and the Province will share in the profits.

The Federal Government has indicated interest in assisting the development of the principles disclosed in the patent for application specifically for Nova Scotia.

The research contracted from Ontario Research Foundation will be concluded during early 1971, and it is expected an application for another patent may be sought. The results of this work, involving the use of high intensity ultra-violet radiation, appear favourable on a laboratory scale and will now require development on a full-scale installation.

Water Supply

Approximately 3,600 lineal feet of 24-inch diameter pipe was installed by contract for the purposes of supplying raw water to the new water treatment plant for the Town of Port Hawkesbury and other industrial plants in the Strait of Canso area.

Due to the expansion of the Anil plant at East Chester, it was necessary to expand the water supply facilities presently owned and operated by the Province. This required the construction of a new dam and spillway at the outlet of Timber Lake to create additional water storage facilities for the requirements of the Anil plant. The contractor began work on the construction of the dam and spillway late October 1970, but adverse weather conditions during late November and the month of December made it necessary to shut down the construction work until early 1971. About 25 per cent of this work has been completed by 31 December 1970, and the completion date for the total project is now about mid-June 1971.

An erosion problem along the west bank of the multi-purpose reservoir has caused great concern to the individual property owners affected. A company was engaged in mid-August to carry out legal surveys around the perimeter of the reservoir in order to determine the areas of the number of properties involved along the present shoreline. The purpose of this survey is to aid in determining the most feasible and least expensive method of curbing the present erosion problem, assuming the present water level is maintained.

Winter weather has caused substantial delays in completing this work, but it is anticipated that the field work and drawings pertaining to this survey will be completed in early February 1971.

A total of 46 applications for water rights were received and reviewed. Of this total, 12 applications were for renewal and the remainder for new occasions. Rejection of three of the applications was recommended.

A code of charges for water rights was drafted and presented for government consideration by the Commission, and a decision is expected early in 1971 in this connection.

Pollution Control

Municipal

Municipal pollution abatement activities continued at a

high rate and a record total of 208 projects were reviewed and recommended for approval.

During 1970, an amount of $201,535.34 was advanced to municipalities for studies approved by the Water Resources Commission. An additional amount of $286,204.76 was paid in the form of grants to municipalities for pollution abatement programs.

The more notable projects under construction or completed during 1970 are summarized as follows:

	Capital Costs
Baddeck - Sewerage System	$ 330,000.00
Bedford-Sackville - Sewerage System	3,780,000.00
Bridgewater - Sewerage System	792,000.00
Elmsdale - Water and Sewerage Systems	500,000.00
Enfield - Sewerage Systems	424,000.00
Lawrencetown - Sewerage Systems	138,000.00
Mabou - Sewerage Systems	52,000.00
Middleton - Sewerage Systems	340,000.00
New Minas - Sewerage System	447,000.00
Port Hood - Water and Sewerage Systems	463,000.00
St. Peters - Sewerage System	169,000.00
Sherbrooke - Water and Sewerage Systems	176,000.00
Stewiacke - Water and Sewerage Systems	580,000.00
Westville - Water and Sewerage System	2,012,600.00
Windsor - Sewerage System	1,378,000.00

The pollution control studies completed during 1970 with the estimated costs of implementing the recommendations are as follows:

	Cost of Implementation
Deep Brook	$ 296,000.00
Halifax	260,000,000.00
Halifax County (Part 1)	1,047,000.00
Mahone Bay	210,000.00
Shelburne	1,082,000.00
Walton	155,000.00

Additional pollution control studies started but not completed are as follows:

Antigonish
Antigonish County
Canning
Cape Breton County
Colchester County
Kentville
Parrsboro
Pleasant Hill
Truro
Wolfville
Yarmouth

When these studies have been completed, all major towns and villages and most of the more-populated counties of the Province will have completed the first step in a pollution control program.

Industrial

The attempts to mount an adequate and satisfactory industrial pollution abatement program are judged to be insufficient, and it has become obvious that a greater effort in terms of staff investigation is required. The addition of engineers mentioned previously in this report will improve these circumstances to a considerable degree. Notwithstanding the deficiencies of staff, a considerable amount of progress has been made.

Assistance was rendered to Federal authorities in pollution abatement efforts in connection with the grounding and sinking of the tanker "Arrow". Dumpsites for the material recovered from beaches were located and approved. In addition, plans were drawn up for emergency water supplies for industries threatened by the oil spill.

During 1970, the Chloro-Alkali Plant of Canso Chemicals commenced operation. At the insistence of the Water Resources Commission the control measures installed at this plant cause it to compare favourably with any plant of this type with regard to loss of mercury to the environment. In brief terms, this plant is under orders to not discharge to the environment any aqueous stream which might contain mercury. In addition, filters have been installed in the off-gas lines to minimize discharge from this source to a level of about two pounds of mercury per year. There remains, however, the question of mercury in the product from this plant, and while this amount is small and certainly no greater than the mercury

content of the product appearing on the market, the company has been ordered to install the latest types of filtration equipment. Delays in receiving this equipment from the manufacturers has resulted in the production of some caustic which contains a small amount of mercury. Installation of the filtration equipment is now expected by mid-January 1971.

Michelin Tire Company have submitted plans for waste treatment facilities for the Bridgewater and Granton plants. These proposals have been given tentative approval and represent the existing state of the art for pollution abatement measures for these types of industrial waste. The proposals with regard to the Bridgewater plant are impressively elaborate, and it would appear that the company is putting forward a most commendable effort with respect to pollution control.

The pollution control plans submitted by Kaiser Aluminum in regard to the celestite mine at Lake Enon have been approved.

Of the outstanding problems, the remaining most important has been the question of the waste treatment facilities at the Anil Canada plant at East River, Chester. These facilities, while having demonstrated considerable improvement during the past year, are generally less than satisfactory at the present time and considerable more effort will be required.

The circumstances of the waste treatment facilities at Boat Harbour were reviewed by Rust Associates and a report submitted in August. The Commission considered this report and made recommendations to government. A decision is pending.

During 1970, attempts continued with several established companies in Nova Scotia to cause a start in pollution abatement programs. While these representations will continue, it is now planned to consolidate the information available, from surveys, to determine the status of the industrial pollution problem on a quantitative basis.

Utility Operation

The number of water utilities owned by the Province and under the jurisdiction of the Water Resources Commission increased to ten following the acceptance of the Lockeport Sea Water Pumping facilities. The plant, which serves nearby fish

plants at Lockeport, had been inactive for a period of time prior to the Province assuming ownership. As a result, an extensive program of maintenance and rebuilding was carried out at these facilities.

The pumping facilities at Granton, Pictou County, were expanded with the addition of extra pumping capacity and related controls to provide additional standby capability for the Scott Maritimes Pulpmill and to meet the water requirements of the new Michelin Tire Plant nearby. The additions to the pumping station were nearing completion at the end of the year.

The Strait of Canso Water Supply System at Point Tupper began to approach the expected average water demand as the Gulf Oil Refinery commenced taking water from the system and the Canadian General Electric Heavy Water Plant demand increased. With the increased demand expected shortly for the Town of Port Hawkesbury and the Power Commission's Thermal Plant, it is anticipated that the requirements will equal the full capacity of the first stage development.

It is planned to review again the method of managing these utilities and tender recommendations to government for consideration.

Conclusion

The past year continues to demonstrate progress in pollution abatement and, indeed, for that matter in other aspects of water resource management. Without doubt, the high cost of waste treatment works continues to be the major impediment in preventing more dramatic results in this endeavour.

Closer collaboration is expected with the Federal Government during 1971 as the new Department of the Environment is organized and related programs are consolidated.

The Water Resources Commission wishes to express its appreciation for the cooperation and assistance received from Provincial and Federal agencies, as well as certain private organizations. This assistance has certainly contributed to progress in water resource management in the Province.

Respectfully submitted,

E. L. L. Rowe,
Chairman.